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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,427

02/06/2006

Rudolf Rigler

2923-747

8429

6449

7590

05/22/2009

ROTHWELL, FIGG, ERNST & MANBECK, P.C.  
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WASHINGTON, DC 20005

EXAMINER

ELEY, JESSICA L

ART UNIT

PAPER NUMBER

2884

NOTIFICATION DATE

DELIVERY MODE

05/22/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,427	<b>Applicant(s)</b> RIGLER ET AL.	
	<b>Examiner</b> JESSICA L. ELEY	<b>Art Unit</b> 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The Non Patent Literature not previously included with the submitting of the information disclosure statement (IDS) filed February 6, 2006, has been filed on February 10, 2009 and has been considered.

### ***Response to Arguments***

Applicant's arguments filed February 10, 2009 have been fully considered but they are not persuasive.

Applicant argues that Hoyt does not teach the limitation "multiple confocal measuring volumes," on the bottom of the Remarks Page 5. The examiner would like to point out that the exact terminology used in the claim is "multiple confocal *volume elements* in the respective measuring volume." Thus the broadest reasonable interpretation of the claim would include elements associated with the measuring volume such as mirror 41 taught by Hoyt.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 7-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyt US 2001/0033374 A1 and further in view of Stern et al. US 2005/0012033 A1 (henceforth referred to as Stern).

Regarding **claim 7**, Hoyt teaches a device for determining luminescent molecules by means of optical excitation in confocal measuring volumes (FIG. 6), comprising:

A carrier arrangement (plate **33**) for holding a sample that contains molecules (illuminate sample **50**) to be determined,

An optical excitation device for providing multiple light beams and, in particular, comprising

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at least one light source **30**,  
at least one passive or active diffractive optical element **40** for splitting  
penetrating light into multiple beam, and  
a focusing optics **36** for focusing penetrating multiple light beams into multiple  
confocal volume elements in the respective measuring volume for the purpose of exciting  
luminescence in the multiple confocal volume elements,

An optical detection device **55** for detecting luminescence for the confocal volume  
elements, for capturing emitted radiation from the multiple confocal volume elements, and

Signal processing and evaluation means for processing the signals provided by the  
detector (FIG. 7).

Hoyt does not go into detail about the detector element **55**, instead leaving it to one of  
ordinary skill in the art to pursue the known options in the art. Stern teaches an imager for use in  
the field of bio-fluorescence (§0014). The detector taught by Stern comprises a spatially  
resolving sensor matrix of avalanche photodiodes that is produced using IC technology, in  
particular CMOS technology, and is integrated in a sensor chip with Geiger mode wiring  
(§0117). It would be obvious to one of ordinary skill in the art at the time the invention was  
made to use the imager taught by Stern in the system taught by Hoyt since Stern teaches that this  
imager outperforms with respect to low-light sensitivity and high speed applications requiring  
real-time continuous data acquisition and signal processing (§0117).

Regarding **claim 8**, the disclosures of Hoyt and Stern address all the limitations of parent  
claim 7, further the teachings of Stern show the signal processing and evaluation means are  
integrated in the sensor chip (§0083).

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Regarding **claim 9**, the disclosures of Hoyt and Stern address all the limitations of parent claim 7, further the teachings of Stern teach the detector in which the signal processing and evaluation means comprises at least one cross-correlation function of first or higher correlation orders of measuring signals (§0040).

**Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyt US 2001/0033374 A1 and Stern et al. US 2005/0012033 A1 (henceforth referred to as Stern), and further in view of Silver US 6,078,681.

Regarding claim 10, the disclosures of Hoyt and Stern address all the limitations of parent claim 7, as discussed above. Hoyt and Stern do not directly teach the signal processing and evaluation means comprising circuits for carrying out a fast Fourier transform of the measuring signals. However, such a step is very common in the art as evidenced by Silver. Silver teaches an imaging system that uses fast Fourier transform as an analysis tool (column 12 lines 50-54). It would be obvious to one of ordinary skill in the art at the time the invention was made to use a fast Fourier transform of the measuring signal since Silver teaches that standard software exists for analysis of multichannel image data (column 12 lines 49-56), which the image data from Hoyt and Stern is.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA L. ELEY whose telephone number is (571)272-9793. The examiner can normally be reached on Monday - Thursday 8:00-6:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/David P. Porta/

Supervisory Patent Examiner, Art Unit  
2884

/J. L. E./

Examiner, Art Unit 2884